

REMARKS

In the Office Action dated March 11, 2010, the drawings were objected to because the Examiner stated the boxes in Figure 4 should be provided with legends. A revised version of Figure 4 is submitted herewith, which is in full compliance with all provisions of 37 C.F.R. §1.84.

Claim 30 was rejected under 35 U.S.C. §101 as being directed to non-statutory subject matter. In response, claim 30, in addition to the other amendments made therein, has been amended to refer to a non-transitory computer-readable medium, and therefore constitutes statutory subject matter according to the most recent United States Patent and Trademark Office guidelines.

Claims 16-32 were rejected under 35 U.S.C. §112, second paragraph as being indefinite for the reasons specifically stated by the Examiner in paragraphs 7 through 18 of the Office Action. Those claims have been amended where necessary to respond to the items noted by the Examiner, and all claims are therefore submitted to be in full compliance of all provisions of Section 112, second paragraph.

Claims 16-18, 21-24 and 28-32 were rejected under 35 U.S.C. §102(b) as being anticipated by Chang et al. This rejection is respectfully traversed for the following reasons.

In substantiating the rejection of the aforementioned claims based on Chang et al, Applicant respectfully submits that the Examiner has incorrectly equated the "model" that is described in the Chang et al reference with the "predetermined, generalized parameterized anatomical body model" of the independent claims of the present application. Moreover, each of the independent claims of the present

application has been amended to further define this anatomical body model as being non-specific to any one patient.

As is explicitly stated in the Chang et al reference at column 4, lines 66-67, the "model" that is used in accordance with the procedure disclosed in the Chang et al reference is an abstract description of the examination subject himself or herself, i.e., the examination subject that is currently undergoing an examination. The "model" disclosed in Chang et al, therefore, is, and must be, patient-specific, i.e., the model that is disclosed and used in the change reference must necessarily describe the person currently undergoing the examination in question.

This is in contrast to the predetermined, generalized parametrized anatomical body model of the independent claims of the present application which, as noted above, is non-specific to any one patient.

Furthermore, the Chang et al reference makes use of the aforementioned "model" (i.e., the abstract description of the current examination subject) by adapting that model to a "pattern model" (template). By contrast, in the subject matter of the independent claims of the present application, the anatomical body model is adapted to the examination subject with the use of the initially acquired magnetic resonance overview images.

Therefore, the use of the model described in the Chang et al reference is completely opposite to the use of the anatomical body model disclosed and claimed in the present application. In Chang et al, the "starting point" is a body model that describes the specific examination undergoing an examination, and that body model is then adapted to a more generalized template. By contrast, in the subject matter of the independent claims of the present application, a generalized anatomical body

model is used as the starting point, that is non-specific to any one patient, and that anatomical body model is then individualized according to a number of MR overview exposures of the current examination subject. This is necessary in accordance with the present invention because the resulting individualized is then used to determine the position and orientation of subsequent magnetic resonance slice image exposures of the patient that are obtained.

Moreover, the procedure disclosed and claimed in the present application is significantly more simple and less prone to error in the implementation thereof than the procedure disclosed in the Chang et al reference. In the Chang et al reference, a model is generated from the overview images themselves, by extracting a model description from the overview exposures. Therefore, if the overview exposures embody image artifacts or have a poor acquisition quality, the resulting model will unavoidably, and possibly without being noticed, embody these deficiencies as well.

By contrast, in the subject matter disclosed and claimed in the present application, by starting with a parameterized, generalized body model, any errors or artifacts that may be present in the overview exposures either have only a subordinate role in generated the individualized model, or can be recognized relatively easily, because the ensuing adaptation then becomes very problematical.

Moreover, as noted above the individualized body model is used to determine the position and orientation of the subsequently obtained slice images, which is not disclosed or suggested in Change et al.

Therefore, Applicant submits that none of claims 16-18, 21-24 or 28-32 is anticipated by Chang et al.

Claims 19, 20 and 25-27 were rejected under 35 U.S.C. §103(a) as being unpatentable over Chang et al in view of an article by Itti et al. This rejection is also respectfully traversed, for the following reasons.

The above arguments concerning the Chang et al reference apply to this rejection as well. In general, even if the Chang et al reference were modified in accordance with the teachings of Itti et al, the subject matter of claims 19, 20 and 25-27 still would not result, for those reasons noted above.

Moreover, the Itti et al reference includes information that is clearly derived from the information in the Chang et al reference, and does not go beyond the basic teachings of Chang et al. In Itti et al, as in Chang et al, although a "reference template" and individual overview images of the patient are acquired, again the adaptation that takes place is to adapt the exposures of the patient to the reference template, rather than the opposite, as is the case in the subject matter of the present application.

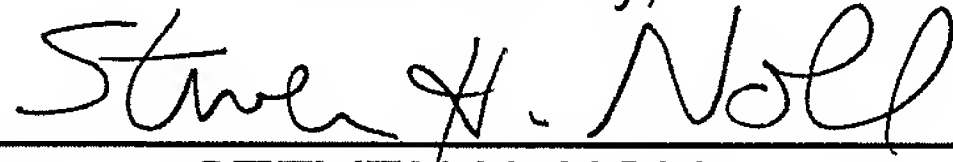
Therefore, none of claims 19, 20 or 25-27 would have been obvious to a person of ordinary skill in the field of magnetic resonance imaging, under the provisions of 35 U.S.C. §103(a), based on the teachings of Chang et al and Itti et al.

All claims of the application are therefore submitted to be in condition for allowance, and early reconsideration of the application is respectfully requested.

Early reconsideration of the application is respectfully requested.

The Commissioner is hereby authorized to charge any additional fees which may be required, or to credit any overpayment to account No. 501519.

Submitted by,



(Reg. 28,982)

STEVEN H. NOLL
SCHIFF, HARDIN LLP
CUSTOMER NO. 26574
Patent Department
233 South Wacker Drive,
Suite 6600
Chicago, Illinois 60606
Telephone: 312/258-5790
Attorneys for Applicant

CH2\8733324.1